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Japanese Patent

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ROLL PAPER HOLDER

[Roru Pepa Horuda]

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Specification

1. Title of the invention

ROLL PAPER HOLDER

2. Claim

A roll paper holder, characterized by being equipped with a concave groove consisting of ribs drawn in a U shape; ribs with a triangular cross section installed in the groove at the positions perpendicular to the U-shaped ribs, rotational shafts installed on the back face of the above-mentioned U-shaped ribs; parallel ribs for fixing a roller installed on the side surface of the above-mentioned U-shaped ribs; and holes for installing a coil spring.

3. Detailed explanation of the invention

(Industrial application field)

The present invention pertains to a roll paper holder that can be used in mass-producing printers, etc.

¹ Numbers in the margin indicate pagination in the foreign text.

(Prior art)

In general, in case a large amount of printers are produced, a paper roller holder as shown in Figures 4 and 5 is used.

Next, referring to the figures, an example of a conventional paper roller holder is explained.

Figures 4 and 5 show a conventional roll paper holder. In these figures, 1 is a roll paper, 2 is a shaft, 3 is a roll paper holder, and 4 is a case.

For the roll paper holder constituted as mentioned above, the operation is explained below.

First, the shaft 2 is penetrated into the core of the roll paper 1, and both ends of the above-mentioned shaft 2 are fitted to the U type roll paper holder 3 fixed to the inner wall of the case 4. If the roll paper 1 is used, the roll paper holder 3 is used as a bearing, and the shaft 2 is rotated as a rotational shaft.

(Problems to be solved by the invention)

On the other hand, in such a roll paper holder, since the shape is a U shape and the insertion port is upward, the work for fitting the roll paper and the shaft to the roll paper holder in the case is very difficult since the space is narrow. Also, since the shaft is only put on the roll paper holder, /2

when a strong vibration is applied to it or when the device is inclined or upside down, it is apt to be separated.

The present invention considers the above-mentioned problems and provides a roll paper holder with a structure in which a roll paper is easily loaded and difficult to be separated after loading.

(Means to solve the problems)

In order to solve the above-mentioned problems, in the roll paper holder of the present invention, ribs with a triangular cross section are installed in a U-shaped groove, and the elasticity of the shaft is utilized as a stopper for preventing the separation. In addition, rotational shafts are installed, and when the U-shaped groove inlet is positioned in the direction in which the loading work is easy during the loading of the roll paper and rotated in the direction in which the separation is difficult.

(Operation)

The present invention has the above-mentioned constitution. The inlet of the U-shaped groove is directed to the roll paper inserting direction, and the inserting work of the roll paper can be easily carried out. The inserted roll paper is completely fixed by installing the ribs with a triangular cross section for preventing the rewinding when the shaft arrives at a

regular position. After loading the roll paper, if a case lid is closed, the roll paper is rotated round the rotational shaft by interlocking with it, and the U-shaped inserting port is directed to the upper side at which the shaft is difficult to be separated.

(Application example)

Next, the roll paper holder of an application example of the present invention is explained referring to the figures.

In Figures 1, 2, and 3, 1 is a case, 2 is a cast lid, 3 is a lid holder, 4 is a roll paper, 5 is a shaft, 6 is a flange for fixing the roll paper, 7 is a coil spring, 8 is an E type washer, 9a is a U-shaped groove of a roll paper holder, 9b is a roller holding part installed in the roll paper holder. 9d is a spring fixing part installed in the roll paper holder. 9e is a rotational shaft of the roll paper holder. 10 is a roller. 11 is a spring for rotating the roll paper holder. 12 is a fixer for fixing the roll paper holder to the case. 13 is a screw for fixing said fixer.

For the roll paper holder constituted as mentioned above, the operation is explained using Figures 1, 2, and 3.

As shown in Figure 2, shaft 5, flange 6, and coil spring 7 are assembled and fixed by the E type washer 8 and inserted as a shaft into the core hole of the roll paper 4. In this state, as

shown in Figure 1, it is inserted into the U-shaped groove 9a of the roll paper holder. As shown in Figure 2, since the shaft 5 has an elasticity by the coil spring 7, the ribs 9b with a triangular cross section rides across said U-shaped groove 9a and is completely fitted.

Next, as shown in Figure 1, if the case lid 2 is closed, the roller 10 is rotated along with the cam part of the lid holder 3, the inlet of the U-shaped groove 9a is rotated round the rotational shaft 9e, and the roll paper 4 is moved in the direction in which it is difficult to be separated and the fixed by the spring 11. If the case lid 2 is opened, the U-shaped groove 9a is rotated contrary to the above-mentioned operation and stops at the position where the removal of the roll paper 4 is easy.

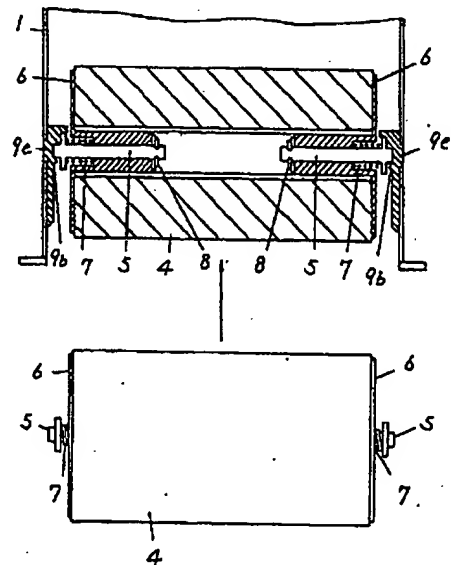
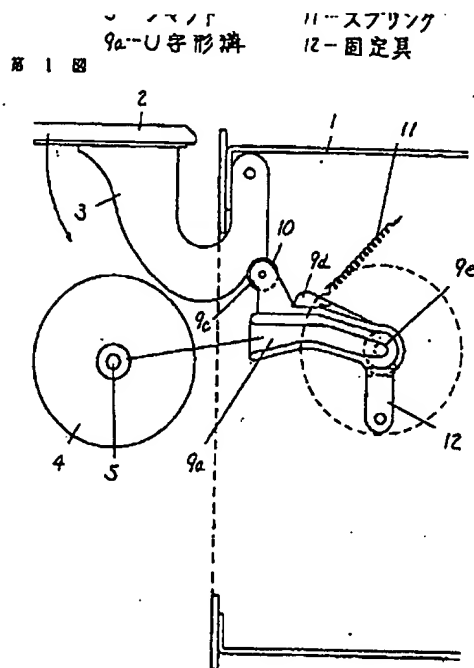
(Effects of the invention)

As mentioned above, according to the present invention, since the direction of the U-shaped groove is rotated to change, the attachment and detachment work of the roll paper can be easy. At the same time, since the ribs with a triangular cross section are installed in part of the U-shaped groove, the roll paper and the shaft are not easily separated, even if the device receives a vibration or shock or the device is obliquely installed.

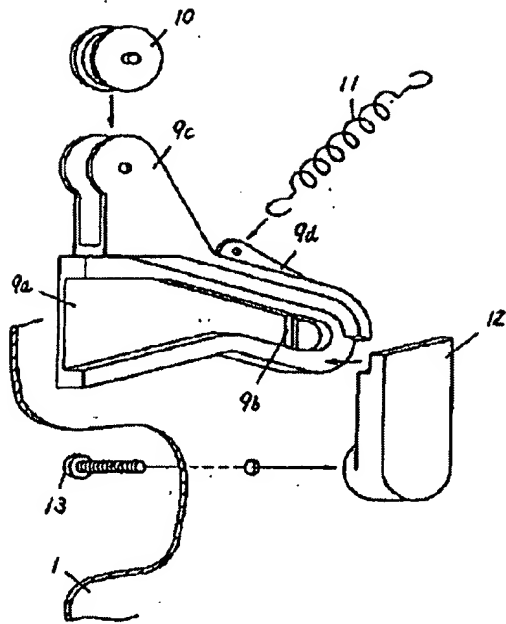
4. Brief description of the figures

Figure 1 is a side view showing the roll paper holder and its peripheral part in an application example of the present invention. Figure 2 is its partial cross section. Figure 3 is its partial detailed diagram. Figure 4 is a side view showing a conventional holder. Figure 5 is its partial cross section.

- 9a U-shaped groove
- 9b Rib with a triangular cross section
- 9c Roller holding part
- 9d Spring fixing part
- 9e Rotational shaft

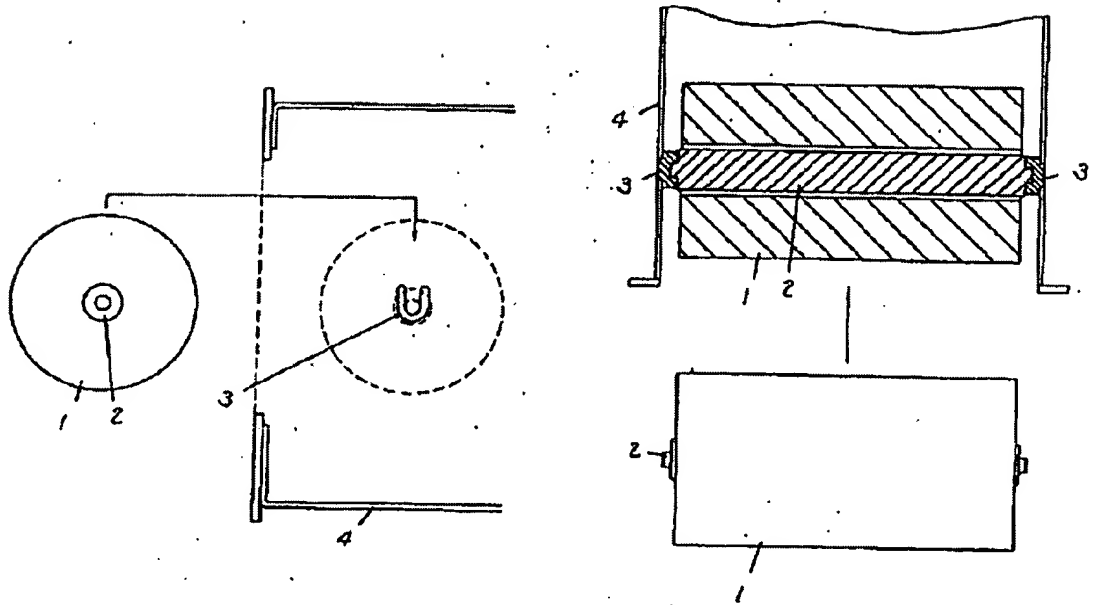


第 3 圖



第 5 圖

第 4 圖



1 Case

- 2 Case lid
- 3 Lid holder
- 4 Roll paper
- 5 Shaft
- 9a U-shaped groove
- 9c Roller holding part
- 9d Spring fixing part
- 9e Rotational shaft
- 10 Roller
- 11 Spring
- 12 Fixer